

8-7

Skills Practice

Solving Quadratic Systems

Find the exact solution(s) of each system of equations.

$$\begin{aligned} 1. \quad y &= x - 2 \\ y &= x^2 - 2 \end{aligned}$$

$$\begin{aligned} 2. \quad y &= x + 3 \\ y &= 2x^2 \end{aligned}$$

$$\begin{aligned} 3. \quad y &= 3x \\ x &= y^2 \end{aligned}$$

$$\begin{aligned} 4. \quad y &= x \\ x^2 + y^2 &= 4 \end{aligned}$$

$$\begin{aligned} 5. \quad x &= -5 \\ x^2 + y^2 &= 25 \end{aligned}$$

$$\begin{aligned} 6. \quad y &= 7 \\ x^2 + y^2 &= 9 \end{aligned}$$

$$\begin{aligned} 7. \quad y &= -2x + 2 \\ y^2 &= 2x \end{aligned}$$

$$\begin{aligned} 8. \quad x - y + 1 &= 0 \\ y^2 &= 4x \end{aligned}$$

$$\begin{aligned} 9. \quad y &= 2 - x \\ y &= x^2 - 4x + 2 \end{aligned}$$

$$\begin{aligned} 10. \quad y &= x - 1 \\ y &= x^2 \end{aligned}$$

$$\begin{aligned} 11. \quad y &= 3x^2 \\ y &= -3x^2 \end{aligned}$$

$$\begin{aligned} 12. \quad y &= x^2 + 1 \\ y &= -x^2 + 3 \end{aligned}$$

$$\begin{aligned} 13. \quad y &= 4x \\ 4x^2 + y^2 &= 20 \end{aligned}$$

$$\begin{aligned} 14. \quad y &= -1 \\ 4x^2 + y^2 &= 1 \end{aligned}$$

$$\begin{aligned} 15. \quad 4x^2 + 9y^2 &= 36 \\ x^2 - 9y^2 &= 9 \end{aligned}$$

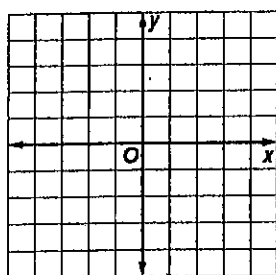
$$\begin{aligned} 16. \quad 3(y + 2)^2 - 4(x - 3)^2 &= 12 \\ y &= -2x + 2 \end{aligned}$$

$$\begin{aligned} 17. \quad x^2 - 4y^2 &= 4 \\ x^2 + y^2 &= 4 \end{aligned}$$

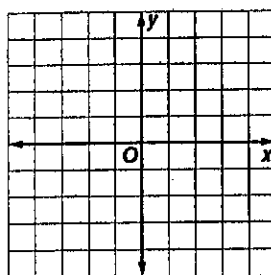
$$\begin{aligned} 18. \quad y^2 - 4x^2 &= 4 \\ y &= 2x \end{aligned}$$

Solve each system of inequalities by graphing.

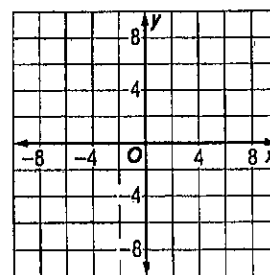
$$\begin{aligned} 19. \quad y &\leq 3x - 2 \\ x^2 + y^2 &< 16 \end{aligned}$$



$$\begin{aligned} 20. \quad y &\leq x \\ y &\geq -2x^2 + 4 \end{aligned}$$



$$\begin{aligned} 21. \quad 4y^2 + 9x^2 &< 144 \\ x^2 + 8y^2 &< 16 \end{aligned}$$



22. **GARDENING** An elliptical garden bed has a path from point A to point B. If the bed can be modeled by the equation $x^2 + 3y^2 = 12$ and the path can be modeled by the line $y = -\frac{1}{3}x$, what are the coordinates of points A and B?

